

In order to help citizens understand more clearly many of the environmental health issues in Ravalli County and the role of the Environmental Health Department in addressing these issues, our department will run a series of weekly newspaper articles titled "Environmental Health Talk."

In this ongoing series we hope to help raise the community's awareness of issues such as air and water quality and give readers useful tips on topics like recycling, collecting and disposing of hazardous materials and maintaining septic systems, just to name a few. To this end, we welcome public comment. If there's an environmental health issue you'd like us to address, write call or email the department: RCEH, c/o "EnviroHealth Talk," 215 South 4th St, Suite D, Hamilton MT 59840. Phone: 375-6571. Email: rdaniel@ravallicounty.mt.gov

Wastewater Treatment

All occupied buildings in Ravalli County, including dwellings and residences, must have an approved means of wastewater treatment, and unless a building is connected to a city sewer system, that usually means a septic system.

Because the Bitterroot Valley watershed currently houses more than 40,000 people, 13,000 septic systems and about 17,000 wells, keeping human effluent from leaching into the valley's single source of drinking water is of paramount importance. Guidelines designed to protect our groundwater can be found in the Ravalli County Subsurface Wastewater Treatment and Disposal Regulations, and it's the job of the County's Environmental Health Department to administer and enforce these regulations.

Available on our Website --
www.ravallicounty.mt.gov/environmental/documents/septic.pdf -- these regulations are applicable throughout the county, and we recommend people refer to them when they have questions about wastewater treatment.

Installing a Septic System

Unless a wastewater treatment system receives state approval through the Department of Environmental Quality's sanitation-in-subdivision regulations, the process of installing a septic system usually begins with a property owner filling out a Wastewater Treatment System Permit Application, available at the Environmental Health Office or Website --<http://www.ravallicounty.mt.gov/environmental>.

After receiving the application and required fees, the Department will usually schedule a site evaluation by a registered sanitarian. Such an evaluation includes digging a soil test hole to depth of at least eight feet so the Department's sanitarian can observe the soil profile and determine whether the site is appropriate for a septic system.

Groundwater Monitoring

If the site evaluation reveals evidence of seasonally high groundwater, observed groundwater, wetland vegetation or irrigation, the sanitarian will likely require groundwater monitoring during the seasonally high groundwater period (typically March to October). Such monitoring helps determine the level of the groundwater in a specific area. If groundwater is too high (less than 4 feet from the surface), there's a danger of effluent leaching into the water table.

This year, RCEH monitored 313 test pipes in 80 locations throughout the county. Our department's groundwater monitoring technician visited each pipe once a week beginning in March, measuring the level of the groundwater in each pipe and recording the distance from the groundwater to the surface.

Many of the monitoring pipes "failed" during spring runoff, meaning the groundwater came within less than four feet of the surface. For these sites, a wastewater treatment system absorption area, or drain field, is not possible within 25 feet of the pipe.

For the pipes that didn't fail during spring runoff, weekly monitoring continued until the groundwater level either came within 47 inches of the surface or reached a peak followed by a sustained decline.

In general, the pipes that failed after spring runoff did so as a result of flood irrigation, often from neighboring properties. Other pipes failed because of the cumulative effects of irrigation over the season.

Almost all of the test pipes on the west side of the valley reached their peak by early July. By that time, most of the west-side reservoirs had been drawn down and their irrigation ditches were carrying less water.

On the east side of the valley, the groundwater often peaks later because of the cumulative effect of the monstrous canals, the Big Ditch and Republican Ditch, and their myriad lateral ditches. Even now, as of late August, groundwater in a few east-side drainages, like Ambrose and Willow creeks, is still coming up. One site on Willow Creek Road, for instance, had water within 32 inches of the surface on August 27 after being dry through the third week of July.

While we are still monitoring about a half-dozen sites, all on the east side, most of the groundwater monitoring for 2007 is finished. In general, about a third (34 per cent) of the pipes failed, meaning the water table came within four feet of the surface.

About 10 per cent of the pipes had water come between 48 and 60 inches of the surface, which means a septic system may be installed, but only with an engineered sand mound drain field.

Another 10 percent of the pipes saw water between 61 and 71 inches of the surface. These sites may have a septic system with a shallow-trench (less than 24-inch deep) drain field.

The rest of the pipes (45 per cent) had water at or below 72 inches, which means they can have a standard, conventional 24-inch-deep drain field. About 35 per cent of the 300 or so pipes remained dry during the entire monitoring season.

Future Groundwater Monitoring

Because groundwater monitoring takes an entire season to complete, and because wastewater treatment permits must be procured before construction can begin, building projects can often be delayed for up to a year. While we are sympathetic that this may be a costly inconvenience to those waiting to build or subdivide, we have to make sure we are protecting the valley's groundwater from contamination.

Having more than a third of the test pipes turn up dry in a season may seem excessive, but from our perspective, it's best to err on the side of caution. Nevertheless, we are working on ways to better predict a pipe's likelihood of groundwater coming within 6 feet of the surface.

This winter our department will be working with the County GIS Department to map all groundwater pipes monitored in the last two seasons, along with groundwater measurements and seasonal peaks. This information should allow us to predict with greater confidence whether a new site will need monitoring.

We will always have a certain number of dry pipes during a monitoring season, but by using modern satellite mapping technology, we hope to reduce the percentage over time.

Applications for groundwater monitoring will be available January 2, 2008, and must be returned and with payment by March 3. Applications may be picked up at the Ravalli County Health Office at 215 South Fourth, Suite D, in Hamilton between 8 a.m. and 5 p.m. Monday through Friday.